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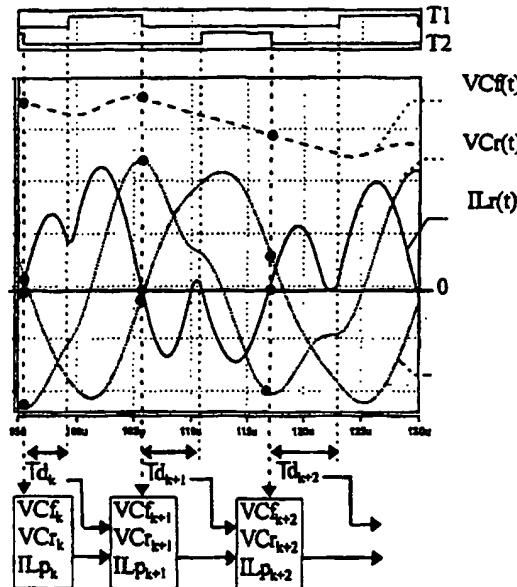
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## (54) Device and method for electrical regulation with optimal control

(57) Method for regulating a converter having transistors, in which the value of a number  $N_1$  of state variables ( $V_{cf}$ ,  $V_{cr}$ ,  $I_{Lp}$ ) is measured and stored, then action is carried out on a number  $N_2$  of control variables ( $T_{dk}$ ,  $T_{dk+1}$ ,  $T_{dk+2}$ ).  $N_1$  being greater than  $N_2$ , the value of the control variables is calculated, at a given instant, for a number  $P$  of periods such that the product of  $N_2$  multiplied by  $P$  is greater than or equal to  $N_1$ .

FIG.4



European Patent  
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## EUROPEAN SEARCH REPORT

Application Number  
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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	US 5 600 234 A (HASTINGS ROY A ET AL) 4 February 1997 (1997-02-04) * abstract; figure A *	1,7	H02M3/337
A	EP 0 605 330 A (UNITE HERMETIQUE) 6 July 1994 (1994-07-06) * column 3, line 56 - column 4, line 36; figure 1 *	1,7	
A	US 4 992 919 A (LEE) 12 February 1991 (1991-02-12) * the whole document *	1,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H02M
<p>The present search report has been drawn up for all claims</p>			
Place of search  THE HAGUE	Date of completion of the search  10 April 2001	Examiner  Gentili, L	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 30 7257

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5600234	A	04-02-1997	JP	8275510 A	18-10-1996
EP 0605330	A	06-07-1994	FR	2700081 A	01-07-1994
			DE	69317751 D	07-05-1998
			DE	69317751 T	23-07-1998
			DK	605330 T	19-10-1998
			ES	2114022 T	16-05-1998
			HK	1008967 A	21-05-1999
			US	5592368 A	07-01-1997
US 4992919	A	12-02-1991		NONE	